

## 5. Prices and The Exchange Rate

In Q3 and in October, inflation moved below the lower limit of the NBS target band and at the end of October, it amounted to 1.4%. Low cost pressures in food production caused by a low price of primary agricultural products in the global and domestic market, low petroleum prices, low aggregate demand and slow growth in regulated prices are the most significant disinflationary factors that have affected the inflation trend below the target limit for a longer period of time (since March 2014). Underlying inflation (measured by the CPI excluding the prices of food, energy, alcohol and tobacco) also moved below the lower limit of the target band during Q3 and October, and the causes for such a development are low aggregate demand, stable and basically unchanged rate of the dinar against euro until the end of October, as well as a negative imported inflation. The National Bank of Serbia continued to ease the monetary policy and repeatedly reduced its key policy rate (KPR), which through the reduction of the interest rates at the money market contributes to a more favorable credit activity, although the KPR is still well above the inflation rate. It is expected that the inflation will move below the lower limit of the target band until the middle of 2016, with a possible one-off entry within the limits of the target band in January next year. Average inflation in 2015 will amount to 1.5%, which is lower than planned 2.7%, while at the end of the year, inflation will be 2.2%. During Q3, the dinar nominally appreciated by 0.7%, in October and November it depreciated by 0.8% and 0.4%, respectively, while the depreciation trend continued in December. The National Bank started with significant interventions at the interbank foreign exchange market in December and during first two weeks sold 210 million euros. The easing of a more significant depreciation in short term may be more important from the standpoint of the macroeconomic stability, but the trend of a moderate depreciation in a long term (over the following years) would contribute to the improvement of a price competitiveness with an acceptable risk on side of the cost of loan servicing in highly euroized economy of Serbia.

### Prices

***In Q3 and October inflation continued its trend below the lower limit of the NBS target band***

Year-on-year inflation at the end of third quarter of 2015 amounted to 1.4 %, which is below the value at the end of Q1 and Q2 (Table T5-1). When observed on a monthly basis, it can be noticed that the year-on-year inflation rate had a great fall in July (from 1.9% to 1.1%), mostly due to a high monthly deflation in July 2015 caused by a seasonal fall in food products, followed by a growth in August (to 2.1%), due to a relatively high monthly price growth in August 2015 caused by the increase in electricity prices and then a further drop in September (to 1.4%) due to the exclusion from the calculation of high monthly inflation in September 2014. In October, inflation remained unchanged. All these values are below the lower limit of the NBS target tolerance band, below which inflation has remained since March 2014. The movement of the year-on-year inflation was largely influenced by the realized monthly inflation rate in the current year, while the exclusion of the last-year's values from the calculation had a much smaller effect due to a low last-year's monthly changes in the Consumer Price Index (except in September). Underlying inflation (measured by the consumer price index, excluding the prices of food, alcohol, tobacco and energy) was also below the lower limit of the NBS target band, and in September amounted to 2.1%, while in October grew to 2.2%. Year-on-year underlying inflation trend in the period longer than a year is relatively stable (it ranges from 1.6% to 2.2%) and during this year it shows a trend of a slight growth (Graph T5-2). The reduction in pensions and wages in public sector affected the decrease in domestic demand, whose recovery did not happen yet, but it can be expected in coming period (among others, due to a simulating measures of the NBS directed towards the recovery of the credit activity). In addition to low aggregate demand, other domestic factors that had significant impact on inflation are also a relatively unchanged dinar exchange rate that affected the price stabilization, one-off increase in the electricity prices that contributed to a return of contribution to the inflation by the regulated prices from negative (deflationary)

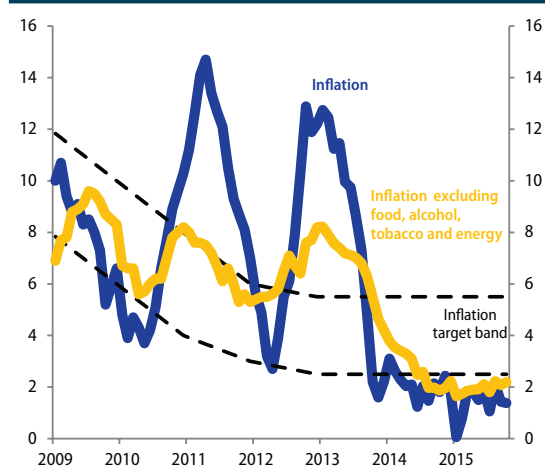
to positive (inflationary) area, while a drop in the interest rate had a disinflationary effect. The price of electricity for a domestic consumption is still below the market price, while this does not apply to the price of electricity for industrial consumers. The most important global factors that affected the inflation in Serbia are a fall in global prices of primary agricultural products (measured by Commodity Agricultural Raw Material Index) which results in a low cost pressures in food production in global and domestic market, then the extremely low price of petroleum, that at the end of Q3 stood at the lowest level since the beginning of 2009 and which contributes to further reducing cost pressures in production, low inflation in the international environment and low price of a greater part of a primary products in global market. Synthetic indicator of the impact of global prices to the inflation in Serbia is the index of external prices expressed in dinars, which in Q3 recorded a drop of 2.8%. Taking into consideration abovementioned factors and their impact on a further movement of inflation, NBS in Q3 and October continued to reduce the key policy rate (KPR), in August, September and October by 50 basis points (b.p.), thus from the beginning of Q3 to mid December, KPR was reduced from 6.0% to 4.5% (Graph T5-3). In addition, The Executive Board of the NBS made the decision in September to reduce the foreign exchange required reserves by 1 percentage point in the following six months, which will at the end of a given period result in the reduction of the rate to 20%, i.e. 13% to maturity sources up to two years, i.e. more than two years, respectively.

**Table T5-1. Serbia: Consumer Price Index, 2009-2015**

	Consumer price index				
	Base index (avg. 2006 =100)	Y-o-y growth	Cumulative index	Monthly growth	3m moving average, annualized
<b>2009</b>					
dec	130.8	6.6	6.6	-0.3	1.6
<b>2010</b>					
dec	144.2	10.2	10.2	0.3	11.7
<b>2011</b>					
dec	154.3	7.0	7.0	-0.7	2.5
<b>2012</b>					
dec	173.1	12.2	12.2	-0.4	9.9
<b>2013</b>					
mar	175.1	11.2	1.2	0.0	4.7
jun	178.2	9.7	2.9	1.0	7.3
sep	177.3	4.8	2.4	0.0	-2.0
dec	176.9	2.2	2.2	0.2	-0.9
<b>2014</b>					
mar	179.1	2.3	1.2	-0.3	5.1
jun	180.4	1.2	2.0	0.1	2.9
jul	180.2	2.0	1.9	-0.1	0.2
aug	179.9	1.5	1.7	-0.2	-0.7
sep	181.2	2.1	2.4	0.7	1.6
oct	180.8	1.8	2.2	-0.2	1.3
nov	180.8	2.4	2.2	0.0	2.0
dec	180.0	1.8	1.8	-0.4	-2.4
<b>2015</b>					
jan	179.6	0.1	-0.2	-0.2	-2.6
feb	181.1	0.8	0.6	0.8	0.7
mar	182.4	1.8	1.3	0.7	5.5
apr	183.4	1.8	1.9	0.5	8.7
may	182.9	1.5	1.6	-0.3	4.0
jun	183.8	1.9	2.1	0.5	3.1
jul	182.1	1.1	1.2	-0.9	-2.8
aug	183.7	2.1	2.1	0.9	1.8
sep	183.7	1.4	2.1	0.0	-0.2
oct	183.3	1.4	1.8	-0.2	2.7

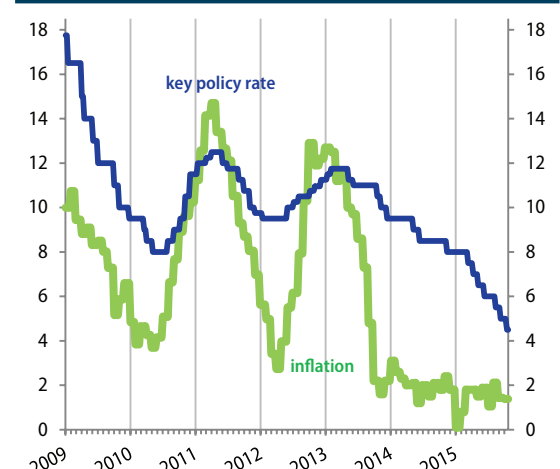
Source: SORS.

**Chart T5-2. Serbia: Y-o-y Inflation Rate and Underlying Inflation and the NBS Target Band 2009-2015**



Source: NBS and QM estimates

**Chart T5-3. Serbia: NBS Reference Interest Rate and y-o-y Inflation Rate, in %, 2009-2015**



Source: NBS

**Deflation in Q3...** Inflation recorded in the third quarter was  $-0.05\%$  (Table T5-4), or monthly: July recorded a deflation of  $-0.92\%$ , August recorded inflation of  $0.88\%$ , and there were no changes in CPI in September. Total price growth from the beginning of the year until the end of Q3 amounted to  $2.1\%$ . Highest contribution to inflation in Q3 was made by the price growth of electricity, tobacco and certain groups of food products (fresh meat, oils and fat), while the fall in the prices of vegetables, petroleum products and to a lesser extent the prices of clothing and footwear had a disinflationary effect. The prices of travel arrangements had approximately neutral effect on the consumer price index (seasonally expected growth in June and July, followed by approximately equal fall in September). In August, the electricity price increased for the consumers at a low voltage network by a total of  $12\%$  due to the increase in the producer's price by  $4.5\%$  and the introduction of excise duty in the amount of  $7.5\%$ , while for the industrial producers that use the electricity at a medium and high voltage, the price increased by the amount of excise duty of  $7.5\%$ . This increase contributed to the growth of inflation of about  $0.6$  percentage points (Table T5-4). Continued growth in the prices of tobacco in July (growth of  $3.5\%$ , contribution to inflation of  $0.16$  p.p.) is a consequence of the increase in excise duty on tobacco products. The growth in the prices of fresh meat, oils and fats partly eased a strong decline in the prices of unprocessed food in Q3, given that there was a strong seasonal fall in the prices of vegetables in the observed period (fall of  $15.9\%$ , contribution to inflation of  $-0.83$  p.p.) and slight decline in the prices of fruit. There was also an increase in the prices of drinking water and wastewater disposal in July, thus Q3 saw the increase in the prices of water supply and utility services of approximately  $2.0\%$  (contribution to inflation of  $0.03\%$ ). The prices of travel arrangements followed the trend of the seasonal increase in July and August, whereas there was an expected drop in the prices of these services in September, making the overall effect of these changes neutral. Prices of petroleum products in Q3 dropped by  $3.8\%$  (contribution to inflation of  $-0.22$  p.p.), which is the result of the lowest crude oil price on a global market since the beginning of 2009 and a slight weakening of the dollar against the euro during Q3. A decrease in the prices of clothing and footwear due to a reduced demand in the summer month, a drop in the price of the natural gas, as well as a decrease in the price of the use of transport means, in large part due to a decrease in the price of a monthly ticket in Belgrade GSP had a disinflationary effect.

**Table T5-4. Serbia: Consumer Price Index: Contribution to Growth by Selected Components**

	Share in CPI (in %)	price increase in Q3 2015	Contribution to overall CPI increase (in p.p.)	Price increase in October 2015	Contribution to overall CPI increase (in p.p.)
Total	100.0	-0.1	-0.1	-0.2	-0.22
Food and non-alcoholic beverages	32.8	-1.9	-0.6	-1.0	-0.33
Food	29.2	-2.2	-0.6	-1.1	-0.33
Alcoholic beverages and tobacco	7.4	2.2	0.2	0.2	0.02
Tobacco	4.7	3.5	0.2	0.0	0.00
Clothing and footwear	4.5	-1.1	-0.1	1.4	0.06
Housing, water, electricity and other fuels	13.6	4.1	0.6	-0.5	-0.07
Electricity	4.8	12.2	0.6	0.0	0.00
Furniture, household equipment, routine maintenance	4.6	0.4	0.0	0.3	0.01
Health	5.0	0.4	0.0	0.5	0.02
Transport	12.9	-1.5	-0.2	-0.7	-0.09
Oil products	5.8	-3.8	-0.2	-1.1	-0.06
Communications	5.0	-0.4	0.0	1.1	0.05
Other items	14.3		0.1		0.11

Source: SORS and QM estimates

**...and in October** The largest contribution to October deflation, which amounted to -0.2%, was made by the seasonal drop in the prices of several groups of unprocessed food (mainly fruit), prices of gas and central heating and the prices of petroleum products, while seasonally expected growth in the prices of travel arrangements, vegetables, as well as clothing and footwear had inflationary effect. Within the food price range, fruits cheapened by 14.1% (contribution to inflation of 0.29 p.p.), prices of fresh meat dropped by 0.7% (contribution of 0.05 p.p.), while the vegetable prices increased by 1.5% (contribution to inflation of 0.08 p.p.). The price of natural gas in October was lower by 8.2 % in comparison to September (contribution of -0.05p.p.), the price of central heating was lower by 2.1% (contribution of -0.03 p.p.), while the price of petroleum products was lower by 1.1% (contribution to inflation 0.06 p.p.). A seasonal growth of the prices in the group of recreation and culture (mostly travel arrangements) amounted to 2.5% (contribution of 0.13 p.p.), clothing and footwear 1.4% (contribution of 1.6 p.p.), while the vegetable price increased by 1.5% (contribution to inflation of 0.08p.p.).

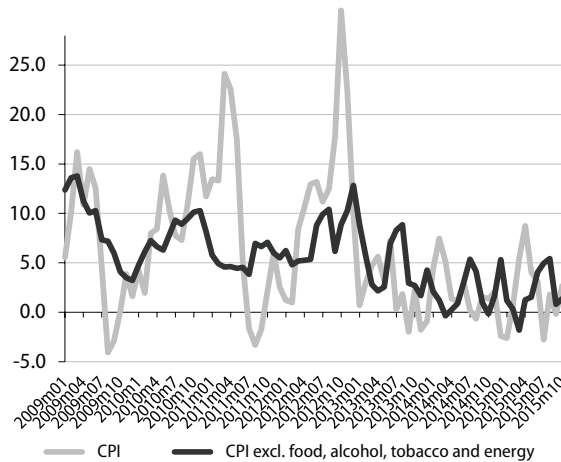
**Total and underlying inflation are at a relatively low level** Total inflation, i.e. its three-month annualized average at the end of Q3 amounted to -0.2%, while in October it increased to 2.7%. Underlying inflation (inflation excluding food, alcohol, tobacco and energy products) amounted to 0.8% at the end of Q3, and in October 1.4% (three-month annualized average is also observed in this case). Oscillations in total and underlying inflation (Graph T5-5) result from the absence of stable trend in the movement of monthly value of the prices that define them. Therefore, due to an omission of monthly June inflation of 0.5%, three-month average of total inflation first dropped to -0.8%, only to rise to 2.7% due to an omission of a relatively high July deflation of -0.9%. Underlying inflation had similar oscillations in previous months, so after high monthly June inflation was omitted, at the end of Q3, its three-month average dropped to 0.8% (from 5.4% in August), only to increase slightly in October to 1.4% due to a little higher monthly October underlying inflation. These fluctuations can be explained with the changes in the prices that are one-off in character: October growth of total inflation- exclusion from the calculation of seasonal fall in the prices of food in July, eased seasonal fall in the prices of fruit in October, while somewhat more modest growth in underlying inflation can be explained with the October growth in the prices of clothing and footwear, telephone equipment, and on the other hand, with the exclusion from the calculation of July fall in the prices of clothing and footwear. In addition to the above short-term factors, inflation is also

**Inflation will remain below the lower limit of the target band until the mid 2016**

influenced by the factors that determine its dynamics in medium and long term, such as stable dinar exchange rate, low aggregate demand, low cost pressures in manufacturing and others.

Sustainable return of the inflation within the limits of the target tolerance can be expected only in the second half of the following year. Inflation will be stable below the NBS corridor, while a short-term inflation entry within the target band is possible in January of 2016 due to the omission from the calculation of negative values in December 2014 and January 2015 and the announced increase in excise duties on alcoholic beverages and petroleum products early next year. However, in the coming months, the omission of this year's high February and March values of monthly inflation will again bring down the year-on-year inflation below the lower limit of the NBS target band. Moreover, it is expected that a modest effect of the spillover of the electricity price growth to other prices will disappear, while the extremely low global petroleum prices and the prices of primary agricultural products will continue to act disinflationary. We estimate that at the end of the year inflation will be around 2.2%, i.e. 1.5% on the annual average. Rough agricultural season will be felt next year, but given that it wasn't much worse than previous

**Chart T5-5. Serbia: CPI and Underlying Inflation Trend, Annualized Rates, in %, 2009-2015**



Source: SORS and QM estimates

one, the effect on inflation will be modest. The risks for a faster inflation growth exist if the global petroleum and primary product prices return to normal levels (from the current six-year minimum), but if the petroleum price doesn't increase, it can result in low pressures to additionally increase the price of electricity in the following period. Possible growth in aggregate demand and inflation in international environment can cause the weakening of disinflationary pressures, while they can be increased by the uncertainties in the financial market in international environment, current trend in the prices of primary products in the global market and the growth in regulated prices that could be lower than expected (and that is included in the projection of inflation).

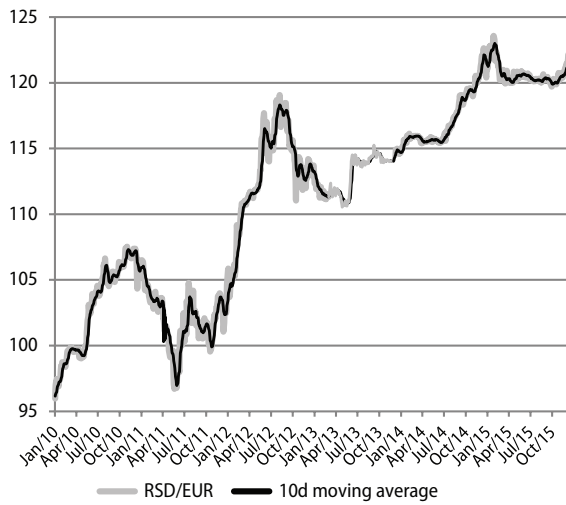
## The Exchange Rate

**Dinar exchange rate in Q3 is almost fixed, while modest depreciation is recorded in October**

During Q3, dinar nominally appreciated against the euro by 0.7%, when observed at the end of the period, i.e. by 0.2% on the quarter average. In relation to the US dollar, dinar strengthened by 1.2% at the end of Q3, i.e. 0.8% on the quarter average. During October and November there was a significant depreciation (Graph T5-6), which can be seen with the dinar weakening at the end of the period against the euro by 0.8% and 0.4% in these months, respectively, i.e. with the strengthening of 0.1% and weakening of 0.5% on a month average. In October and November dinar weakened considerably more against the dollar by 3.2% and 4.2% at the end of the period, i.e. by 0.0% and 5.0% on the month average. Therefore at the end of November when compared to the end of Q2, dinar exchange rate depreciated by 0.5% against the euro, i.e. 6.3% against the dollar. The National Bank, during Q3, intervened at the interbank foreign exchange market mostly in July (IEFM) (by buying 230 million euros), then in August (by buying 140 and selling 10 million euros) and at least in September (by buying 80 million euros at the end of September). Fewer NBS interventions are recorded in October (buying 70 million and selling 10 million euros) and November (purchase of 10 million euros in the beginning and selling of 10 million euros at the end of the month).

Since the beginning of December there have been depreciation pressures, followed by greater NBS interventions for sale of the foreign currency

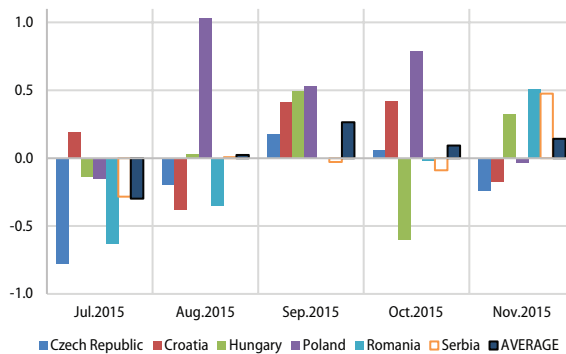
**Chart T5-6. Serbia: Daily RSD/EUR Exchange Rate, 2010-2015**



Source: NBS

Dinar appreciation in Q3 was slightly higher than average of the region countries, but the depreciation from October and November was also above the average values

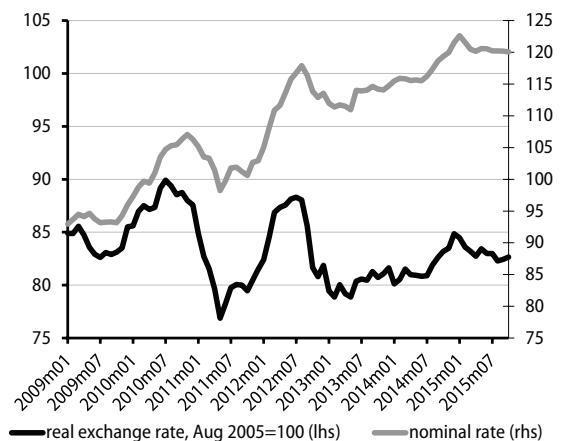
**Chart T5-7. Nominal Exchange Rate Change (in %) in Selected Countries**



Source: Eurostat, NBS, QM estimates

Real appreciation in Q3 and depreciation in October

**Chart T5-8. Serbia: Nominal and Real RSD/EUR Exchange Rate, Monthly Averages, 2009-2015**



Source: NBS, SORS, Eurostat and QM estimates

Note: an increase represents depreciation

During the first two weeks of December, dinar nominally depreciated by about 0.8% when compared to late November. Such a weakening was followed by the sale of 210 million euros in the IFEM by the National Bank of Serbia. Larger interventions of the NBS in order to prevent the dinar weakening are not fully justified, since the daily fluctuations from the beginning of October until now have never exceeded  $\pm 0.27\%$ , and we believe that the trend of moderate depreciation in the following period (over several years) would be an acceptable compromise between improving the price competitiveness of Serbia and the need to prevent significant fluctuations in highly euroized Serbian economy.

During the third quarter the dinar, after the Romanian leu and the Czech crown, is the currency which mostly strengthened against the euro (compared to selected countries, see Graph T5-7). However, in October and November, the dinar is, after the Polish zloty and Romanian leu, the currency that recorded a biggest drop against the euro. The liquidity growth in the international financial market is one of the most important global factors in the first half of Q3 that had an impact to currency strengthening in the region countries. However, since the news on the slowing down of the Chinese economy appeared, as well as due to the uncertainty in the global financial market, there has been a weakening in most of the observed countries.

The dinar during Q3 really appreciated by 0.65% against the euro, while during October, it recorded a real depreciation of 0.27%. Real appreciation in Q3 is the result of the contribution of nominal dinar appreciation and significantly higher deflation in eurozone than deflation realized in Serbia in the observed period. Real depreciation in October was a consequence of negative inflation in Serbia (of -0.22%) and inflation in eurozone (of 0.14%), while nominal appreciation (of 0.09%) contributed to its moderation. Historically looking, real dinar exchange rate at the end of the October was at a similar value as it was in September of 2014, i.e. in October of 2012 (Graph T5-8).